

CLAIMS:

What is claimed is:

1. An apparatus comprising:
a first and a second motor control device, the first and the second motor control devices control rotation speed of a motor,
wherein one of the first and the second motor control devices continue to control rotation speed of the motor upon failure of one of the first and the second motor control devices.
2. The apparatus of claim 1, wherein the first and the second motor control devices operate simultaneously.
3. The apparatus of claim 1, wherein the first and the second motor control devices operate independently.
4. The apparatus of claim 1, wherein control of the motor is switched from one of the first motor control device and the second motor control device upon failure of one of the first motor control device and the second motor control device.
5. An apparatus comprising:
at least one motor,
wherein the at least one motor having at least one pair of bifilar windings.

6. The apparatus of claim 5, further comprising:
at least one electrical pad coupled to the at least one pair of bifilar windings, and
at least one motor control device coupled to the at least one electrical pad.
7. The apparatus of claim 5, further comprising:
at least two electrical pads coupled to the at least one pair of bifilar windings, and
at least two motor control devices coupled in parallel to each of the at least two electrical pads.
8. The apparatus of claim 7, wherein the at least two motor control devices operate
simultaneously.
9. The apparatus of claim 7, wherein the at least two motor control devices operate
independently.
10. An apparatus comprising:
at least one motor,
wherein the at least one motor having at least eight magnetic lobes.

11. The apparatus of claim 10, further comprising:
at least one electrical pad coupled to the at least eight magnetic lobes, and
at least one motor control device coupled to the at least one electrical pad.
12. The apparatus of claim 10, further comprising:
at least two electrical pads coupled to the at least eight magnetic lobes,
and
at least two motor control devices coupled in parallel to each of the at least two
electrical pads.
13. The apparatus of claim 12, wherein the at least two motor control devices
operate simultaneously.
14. The apparatus of claim 12, wherein the at least two motor control devices
operate independently.
15. An apparatus comprising:
a first motor coupled to a shaft and a fan hub,
a fan blade coupled to the fan hub, and
a second motor coupled to the shaft.

16. The apparatus of claim 15, further comprising:

a first housing section coupled to the first motor, and

a second housing section coupled to the second motor,

wherein the first housing section and the second housing section form a single fan enclosure.

17. The apparatus of claim 15, wherein the first motor and the second motor are positioned oppositely.

18. The apparatus of claim 17, wherein the first motor and the second motor rotate in opposite directions to each other.

19. The apparatus of claim 18, wherein the first motor and the second motor operate simultaneously.

20. The apparatus of claim 18, wherein the first motor and the second motor operate independently.

21. An apparatus comprising:
- a first motor coupled to a shaft,
 - a second motor coupled to the shaft,
 - a fan hub coupled to the shaft, and
 - a fan blade coupled to the fan hub.
22. The apparatus of claim 21, further comprising:
- a housing coupled to the first motor and the second motor, and
- wherein the housing forms a single fan enclosure.
23. The apparatus of claim 21, wherein the first motor and the second motor are positioned serially.
24. The apparatus of claim 23, wherein the first motor and the second motor rotate in the same direction.
25. The apparatus of claim 21, wherein the first motor and the second motor operate simultaneously.

26. The apparatus of claim 21, wherein the first motor and the second motor operate independently.

2025-01-01 10:00:00